GEOGRAPHIC NEWS BULLETINS

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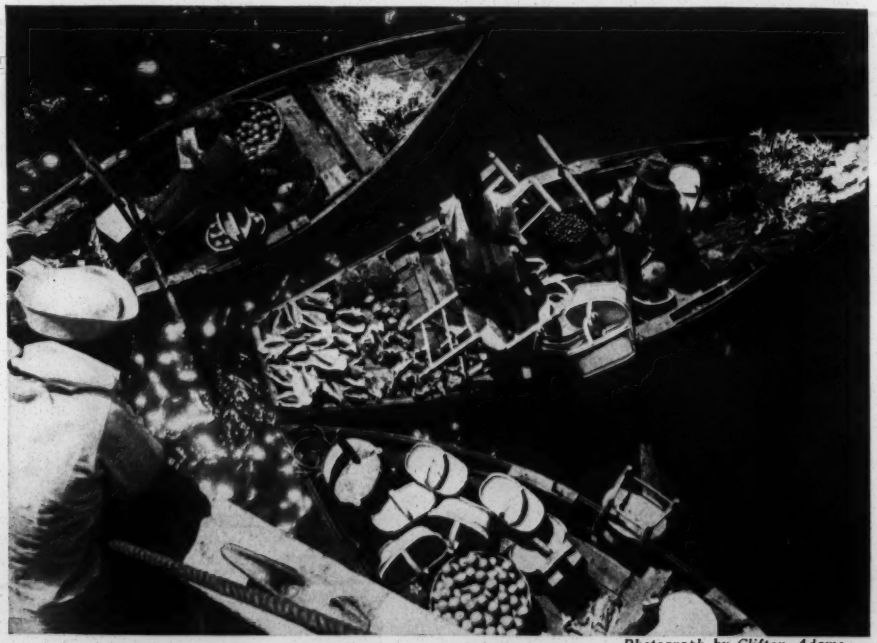

Photograph by Clifton Adams

FLOATING CURIO SHOPS PURSUE THE PURCHASER AT PORT-AU-PRINCE

Competition is so keen in overcrowded Haiti that native venders cannot wait until tourists come ashore. In the bumboats can be seen conch shells, star fish, coral, gourds, pottery, chairs, baskets, oranges, and even dried fish. Passengers toss down coins, a weighted cord is hurled back, and the purchase is hauled up with the cord. If the coin should happen to fall into the sea, the boatman will quickly dive to get it before it reaches the bottom (Bulletin No. 1).

HOW TEACHERS MAY OBTAIN THE BULLETINS

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Hispaniola Has Border Trouble

NOT many islands in the world have an international border. One of this select group is Hispaniola, the big West Indian island which is shared by the Haitian and the Dominican Republics.

Recently this obscure boundary came into the news as a scene of outbreaks in which several Haitians were reported killed. The disorders were said to have been caused by heavy Haitian immigration into Dominican border towns.

Hispaniola's border divides more than governments. On one side of the line is the overcrowded, French-speaking, Negro Republic of Haiti. On the other is the larger, Spanish-speaking, white-controlled Dominican Republic. The two have little in common except the same island home, discovered by Columbus on his first voyage to America and the scene of the shipwreck of his flagship, *Santa Maria*.

Runs Gamut of Obstacles

Although the 193-mile boundary follows throughout much of its length a lofty chain of mountains which forms a natural wall, it cuts the island into two very unequal parts. The Dominican Republic is almost twice as large as its neighbor, Haiti. Yet smaller Haiti has a population of about 3,000,000, as compared to the Dominican Republic's estimated 1,400,000. Haiti, in fact, is one of the most densely peopled nations in the world, having some 275 persons per square mile.

Beginning near the Bay of Manzanillo, on the north, the border runs the gamut of nearly every type of natural obstacle known to geographers. At first it parallels the jungle-draped Copotillo River. After a few miles the boundary takes to the hills, tumbling, like a roller coaster, over some of the highest peaks in the West Indies. In these mountains the frontier traverses a region of pines and oaks.

Near Manneville it plunges into a dry, desertlike trough, which at nearby Lake Enriquillo is 150 feet below sea level—one of the three such depressions in the Western Hemisphere, the other two being in California.

Continuing in a general southward direction, the boundary next leaps over the rugged Sierra de Bahoruco, part of a mountainous backbone more than a mile high along the southern coast of Hispaniola, and finally picks up another small tropical stream, the Rio Pedernales, before it ends in the Caribbean.

Two Motor Roads Link Nations

No railroad crosses this frontier, but there are two motor roads. One, in the north, crosses the Rio Copotillo at Dajabon. The other, about midway, pierces the mountain wall between the Haitian town of Lascahobas and the Dominican village of Las Matas. A narrow-gauge railway from Port-au-Prince, the Haitian capital, reaches almost to the border at Manneville, where an unimproved roadway connects with Ciudad Trujillo, the capital of the Dominican Republic.

While the two nations on the island present sharp social contrasts, there is some similarity in scenery and economic resources. Each raises sugar, tobacco, coffee, and cacao (the source of chocolate) for export. Each has deposits of valuable minerals, largely unexploited. The Dominican Republic, however, has less rainfall for crops but more grazing land for cattle, and greater timber wealth, including mahogany, cedar, lignum vitae, and satinwood.

Twice, in recent years, this second largest of West Indian islands made news for map-makers. The first time was when the old name of Hispaniola, given to it

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Photograph by Clifton Adams

HAITI'S VERSION OF THE "BIG APPLE" IS ACCOMPANIED BY JUNGLE INSTRUMENTS

Drums of the African "voodoo" type are held between the knees and played by being beaten and rubbed with the hands. Only native music—no tunes as we know them—is played on the bamboo horns. The girl at the right does a few steps, and then one of the men, holding a coin in his mouth, tries to imitate them. Unless he does a good job, she takes the coin (Bulletin No. 1).

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Williamsburg Built on Records, Research, and Old Foundations

AN IMPORTANT new item has joined the exhibits in the Court House of restored Williamsburg, that 18th-century island of make-believe-come-true in modern Virginia.

The newcomer is a copper plate about two centuries old, probably engraved to illustrate a book of Virginia travels that was never published. It is the only known picture of the old Williamsburg Capitol and the Governor's Palace, and was an important clue to the proper restoration of the Wren building of William and Mary College (illustration, next page).

This picture of a vanished town lay unused and unidentified, half a hemisphere away, in the famous old Bodleian Library of Oxford. There, several years ago, a research worker from the Williamsburg project found it. That it was located at all is indicative of the patience and detective skill of Miss Mary F. Goodwin, one of the project's foreign scouts, who tracked down a casual reference to an engraving of "buildings, probably in some town in Virginia or Carolina."

Wood Painted Like Marble

Such research required much turning of yellowed pages in old books abandoned to bookworms, and vigorous dust-blowing in libraries and record offices. Fortunately, early Virginia colonists insisted upon knowing where the taxpayers' money went, and careful records of expenditures were kept in the old House of Burgesses, with specific directions as to how public moneys should be spent.

The restored Capitol, at Williamsburg, carries on the taste of legislators of 1705, who voted that the "wanscote and other Wooden work in that part of the building where the General Court is, be painted like marble. . . ." A study of woodwork colored and veined to resemble marble, which survived in the old Virginia estate of Marmion and has been preserved in the Metropolitan Museum of Art, showed research workers just what instructions to give painters.

Such patient piecing together conjured up the entire colonial capital. It could not be revived simply from the dust and rubble, because excavators had to dig several feet for traces. It was assembled from two hemispheres and two centuries.

Floor plans of the main college building and the Governor's Palace were recovered from California and Massachusetts; they had been made by a young amateur architect named Thomas Jefferson. France became another goal of research, to see what records had been left by French soldiers quartered in Williamsburg at the end of the Revolution. A Frenchman's map, showing the town, and the exact location of all buildings, sketched to scale as they were in 1789, became the "Bible of the restoration."

Virginia Mud Makes Best Bricks

While Williamsburg was not such ancient history, it was given the same archeological treatment accorded to the tumbled towers of Troy and the extinct city of Ur. Foundations, old drains, and clogged-up wells were probed for facts, and they yielded forty tons of precious trash: broken tea cups, chips from marble mantels, buttons, bullets, battered spoons, and metal handles. One brass ornament embossed with the lion and unicorn matched perfectly the decorations on an old olive wood secretary being considered for furnishing the Governor's Palace. The desk was thus identified as appropriate.

After 440 modern buildings had been cleared away and 150 colonial foundations had been excavated, the Cinderella town of 18th-century Williamsburg was ready to emerge complete with palace, ballroom, and coaches. But what should she wear? The original town had been clothed in stately brick, with brick-ends glazed to form a bright pattern where they caught the light. Scholar-detectives tracked the glazed-end brick through England, northern Germany, and the Netherlands where the style developed, with no success in finding the mellow rosy color required. Finally, the solution was found by baking plain Williamsburg mud!

Since the slate for some roofs had originally been brought from England, the new Old Williamsburg has a few buildings roofed with imported slate. Other roofs had to look like wooden shingles, so a process of treating asbestos was found which made possible fireproof shingles resembling wood. Manufacturers developed a technique of making glass with the wavy imperfections found in the small panes of colonial windows.

As this 18th-century Rip Van Winkle town began to wake up and claim the attention of 20th-century neighbors, painters started to recapture the colonial capital's youthful freshness with bright colors. Legislative records, inventories, and advertisements in the *Virginia Gazette* indicated that paints in use were Venetian red, fig blue, Spanish brown, spruce yellow, copperas,

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by Columbus, was restored. Previously the island was termed either Haiti or Santo Domingo, which caused not only confusion among outsiders but resentment between the two countries on the island.

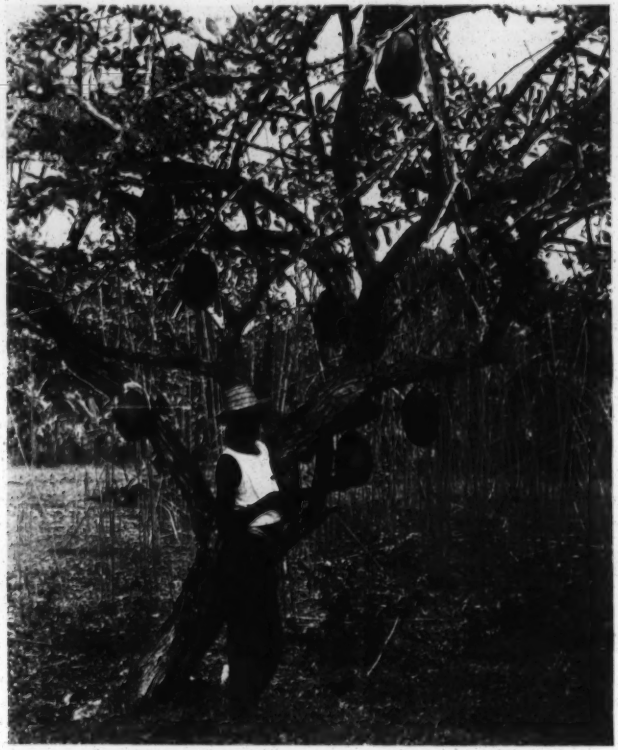
Last year the name of the ancient capital of the Dominican Republic, Santo Domingo, was changed to Ciudad Trujillo, in honor of the nation's president.

Incidentally, another West Indian island is shared by two countries. St. Martin, east of the Virgin Islands, is jointly owned by The Netherlands and France. Other noted "partnership islands" include Sakhalin (Japan-U.S.S.R.), Tierra del Fuego (Argentina-Chile), Timor (Portugal-The Netherlands), Borneo (Great Britain-The Netherlands), and New Guinea (Australia-The Netherlands). A special case of partnership is presented by Ireland, where a border separates two governments of "dominion status"—Northern Ireland and the Irish Free State.

Note: See also "Haitian Vignettes," *National Geographic Magazine*, October, 1934; "Hispaniola Rediscovered," January, 1931; also "Little-Known Marvel of the Western Hemisphere" (Christophe's Citadel), "Haiti, the Home of Twin Republics," and "Haiti and Its Regeneration by the United States," December, 1920.

See also the Map of Mexico, Central America, and the West Indies which was issued as a supplement to the *National Geographic Magazine* for December, 1934. Additional copies may be had at 50c each (paper edition) and 75c each (linen edition).

Bulletin No. 1, November 15, 1937.



Photograph by Clifton Adams

WHERE WATERMELONS SEEM TO GROW ON TREES

Near Ennery, Haiti, a vegetable garden might grow up to be an orchard, judging by this calabash tree, a tropical version of a gourd vine. The large green watermelon-like objects, however, are really very light. They can easily be opened and dried out for use as household utensils. Bore a hole in one, plug it with a stopper, and it serves for a jug. Halve it, and it supplies two bowls.

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Where "Towers Sing" in the United States

ADD "memory bells" to Poe's poetic list of sleigh bells, wedding bells, funeral bells, alarum bells, and assorted tintinnabulations. Completion of the Northcott Memorial Singing Tower in Luray, Virginia, adds one more instance of a memorial function in the United States for mass bell-ringing, which all began back in The Netherlands as alarm and time signals.

The Luray carillon is the second in Virginia, the other being a World War memorial in Richmond. It starts the New World on the second half of a hundred of these Old World "singing towers," whose voices are bells.

Now the United States has more carillons in pealing condition than any other country. In Belgium and The Netherlands, where medieval clock-striking on a large scale grew up to be the world's weightiest musical instrument, the carillon, a number of singing towers have lost their voices because of war, lightning, or age.

Carillon Bells Do Not Swing

Christmas-card style of riotously swinging bells has no place in these modern carillons. Each bell hangs "dead," bolted motionless in place. Its tethered tongue is poised by wires near the out-curving bell lip, ready to bong forth its one musical note in response to the carilloneur at the keyboard (illustration, next page).

American carillons, in contrast to that more primitive form of bell music, chimes, have at least 23 bells of graduated size. Chimes can get along with four to a dozen tones, and lack the precise tuning of carillon bells. Small bells, sometimes in pairs for double volume, take care of high tinkling notes, and large ones running into real tonnage look after the heavy booming. Of Luray carillon's 47 bells, the smallest soprano weighs ten pounds; the big bass four tons. A real giant is the twenty-ton bass in New York City, probably the largest "singing" bell in the world.

The United States now has the largest carillons in the world. Average number in the battalion of bells composing the American carillon is about 42. The Riverside Church, near Columbia University in New York City, has 72 bells to shower their ringing notes down into the nearby canyons of apartment houses. The same number of bells peals across the campus of the University of Chicago. There is one less in the bell chorus of the Bok Tower, Mountain Lake, Florida.

"Singing Towers" Scattered over Nation

Next in number to these three mammoth bell regiments is the Richmond carillon, with 66 bronze throats to join in the mechanical song. Also numbering over 60 bells are the carillons of Cranbrook, Michigan; the Methodist Church Tower of Philadelphia; the Scottish Rite Cathedral of Indianapolis; and the Trinity Church of Springfield, Massachusetts.

Massachusetts is the ringingest State in the Union, with seven carillons, according to the latest bell census. One of the first in the nation, the Singing Tower of the church of Our Lady of Good Voyage, in Gloucester, rings out the departing fisherman and rings in his return. In addition to Trinity Church Carillon, Springfield has a smaller platoon of bells at Hillcrest. The academic air of Andover resounds with the chiming melodies of Phillips Academy Carillon. Cohasset, Wellesley, and Norwood also have singing towers.

Like Andover, which had the first school carillon, and Wellesley, some of the

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and "yellow oaker" (ochre). The Governor's Palace in 1727 was ordered decorated with pearl color in the dining room and cream color in the parlor. Scraping paint from original coats revealed that high colors were popular. The balustrade of the old Slave Gallery in demure Bruton Parish Church had been red and white alternately for eight changes.

Furnishing the reconstructed buildings was a matter of refilling orders dictated by householders and burgesses a century dead. The House of Burgesses in the Capitol, for instance, was known to have had "a table 8 foot long and 5 foot broad." Another housekeeping motion passed by the legislators required that "all seats . . . be covered with green Serge, and stuft with hair, and that there be provided Serge hair, red tape and brass burnish'd nails sufficient for doing the same. . . ." When the burgesses ordered "an Oval table 14 foot long and 6 foot broad," modern research workers went to Edinburgh, Scotland, for a model of the right size, shape, and age.

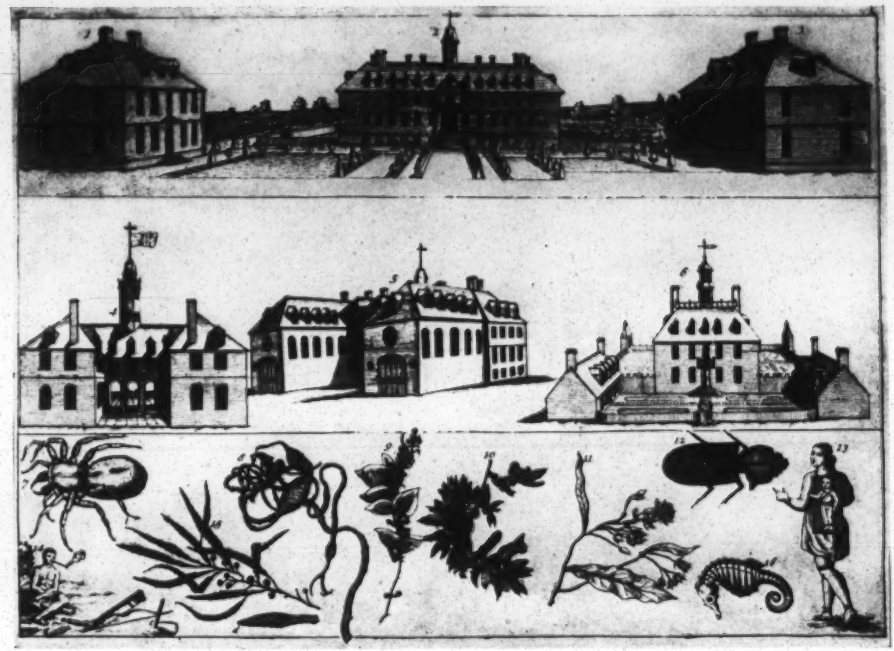
Williamsburg gardens, with their rich variety of greens and geometrical neatness, were remade along patterns furnished by other fine Virginia gardens, such as those of Westover, Upper Brandon and Hickory Hill. The quest for accurate angles of box-bordered garden paths and holly hedges led as far afield, however, as Tennant's Ashby in Northamptonshire, England. The Maze in the Governor's garden duplicates the intricate tangled pathways of the Maze at Hampton Court, near London.

Note: An article, accompanied by unusual black and white and natural-color photographs of historic Williamsburg, appeared in the *National Geographic Magazine* for April, 1937.

Additional illustrations and references about Williamsburg will be found in "The Travels of George Washington," *National Geographic Magazine*, January, 1932; "Virginia—A Commonwealth That Has Come Back," April, 1929; and "The Land of the Best," April, 1916.

See also in the GEOGRAPHIC NEWS BULLETINS: "Williamsburg, Where the Colonial Past Comes to Life," week of March 1, 1937.

Bulletin No. 2, November 15, 1937.



PORTRAIT WHICH GUIDED WILLIAMSBURG'S FACE-LIFTING

Restored Williamsburg could almost be called the town that a print rebuilt. This copperplate engraving (about 1740) is the only known picture from which those key buildings, the Governor's Palace (6) and the first Capitol (4), could be patterned. All the buildings have been restored as here shown. Work had already started on the Wren building (2) of William and Mary College when the picture was found, and a copy was radioed to Williamsburg immediately to guide restoration of the rear elevation (5). On the left of the Wren building (1) is shown the Brafferton Indian School, built in 1723, opposite which stands the College President's House (3). Specimens of the life believed to be found in the Virginia wilderness in the 18th century appear in the bottom panel.

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Bombing of Amoy Recalls Boston Tea Party

AMOY, Chinese port that has frequently been bombed by Japanese airplanes and naval vessels, has one of the finest and best protected harbors along the central Chinese coast. It occupies an island of the same name three miles off the Chinese coast, and is also directly opposite the big Japanese island of Taiwan, or Formosa.

A recent news dispatch reports that Japanese troops have landed on Quemoy Island, off Amoy.

The city has played a part in American history, for from Amoy came some of the tea that figured in the famous Boston Tea Party in 1773. It was chiefly upon tea that Amoy rose from an unimportant coast town to a great port, after China awoke in the middle of the 19th century to discover that foreign trade was the answer to the distribution of its surplus products.

Tea Once Came from Formosa

Nature gave Amoy its excellent harbor. Fingers of land project from the island into the sea and, with small islets, from a protected bay. For some forty years after its opening, Amoy's name was synonymous with tea in the ports of the world; then Japan took possession of the island of Formosa.

Since Formosa was the source of most of the Amoy tea shipments, the loss of the island to China meant disaster to Amoy's foreign trade. Tea from Fukien Province, of which Amoy is the chief port, continued to flow through the port to the tea cups of the world, but the traffic was only a trickle compared with the huge cargoes of the dried leaves in the port's palmiest days.

In recent years, however, Amoy's harbor has again become a busy place. Along with Fukien tea, shipments of paper umbrellas, dried and salted turnips, tobacco, jasmine to flavor tea, plants and shrubs, fruits, vegetables and fish have kept the city on the commercial map. In one year 1,200 tons of narcissus bulbs were shipped to the United States from Amoy. Besides the parade of sea-going vessels that move in and out of Amoy, the harbor is further animated by hundreds of small boats handling local shipping.

Lighters Thrive in Dockless Port

With all its commercial reputation, Amoy is a port without docks, quays or large warehouses. Boats anchor off shore and are loaded and unloaded by half-naked coolies who literally swarm from lighters and sampans to the vessels (illustration, next page).

Beyond the waterfront, Amoy is in the main an old city. Fine business buildings housing banks, foreign branches of American and European commercial houses, and the Amoy University buildings, give it only a slight touch of modernity.

In the heyday of Amoy trade, the city had a population of more than 300,000, but with the passing of the great tea trade the figure dropped to about one-third.

Note: Additional references and photographs of Fukien Province and its great seaport, Amoy, will be found in "Coastal Cities of China," *National Geographic Magazine*," November, 1934; "Youth Explores Its World," May, 1934; "The Geography of Money," December, 1927; "Among the People of Cathay" (duotone insert), June, 1927; "Farmers Since the Days of Noah," April, 1927; and "Scenes in the Celestial Republic" (duotone insert), February, 1926.

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other institutions with bell songs to speed the parting study hour are Princeton, the University of Michigan, and the University of Wisconsin; Duke University at Durham, North Carolina; the Mercersburg Academy of Mercersburg, Pennsylvania; Trinity College, in Hartford, Connecticut; and the Ward-Belmont School in Nashville, Tennessee. The Iowa State Agricultural College of Ames, Iowa, has converted an old set of chimes into a carillon. Small Alfred University, of Alfred, New York, recently assembled a set of fine old bells from 17th- and 18th-century carillons of The Netherlands. The State Agricultural College in Storrs, Connecticut, has a carillon housed in a local church spire.

Like the Alfred carillon, some of America's singing bells are old bronze veterans of European origin. Most, however, are new; the majority of them were cast in foundries of Loughsborough or Croyden, England.

Next to Massachusetts, Michigan and New Jersey have the largest quota of carillons, followed by Connecticut and Pennsylvania. Residents of Alabama, Ohio, Nebraska, and New Hampshire also do not need to leave the State to hear bell concerts. The singing tower of Albany, New York, was copied from the historic belfry of Bruges, "old and brown," which Longfellow climbed to gather material for his poem, "The Belfry of Bruges."

Note: The article, "The Singing Towers of Holland and Belgium," in the *National Geographic Magazine*, for March, 1925, contains a wealth of information and illustrations about the history, background, and operation of carillons. For additional references and photographs of carillons, see: "As London Toils and Spins," January, 1937; "Ontario, Next Door," August, 1932; "Under the South African Union," April, 1931; "Florida—The Fountain of Youth," January, 1930; and "A Vacation in Holland," September, 1929.

Bulletin No. 3, November 15, 1937.

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TO PLAY A CARILLON YOU MOVE KNOBS INSTEAD OF PULLING ROPES

In place of black and white keys, as on an organ keyboard, the carillon has levers attached to wires which run up to the bells. At the lower edge of the picture can be seen pedals for bass bells to be played with the feet. The carilloneur wears leather pads to protect his palms. If this were a concert instead of a lesson, the performer would probably wear a track suit. The white-haired professor (center) is Josef Denyn, director of the world-famous carillon school at Malines, Belgium. The students are Nees (seated) and Lefevre. Four women have been graduated from the Malines school.

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Ghostly Comets Haunt the Skies

SKY gazers scanned the heavens last summer for Finsler's comet, faintly visible to the naked eye. Now astronomers are pointing their telescopes toward a pinpoint of light still without a tail, but recognizable to them, because of its route, as Encke's comet, the eighth one reported this year.

Although less brilliant than Finsler's, Encke's comet has a special claim to fame. It races around and around its orbit at a dizzy speed and whizzes past the sun about every three and a third years. Faithful and punctual, it has put in an appearance on astronomer's records 40 times since its discovery in 1786.

Such mothlike fluttering around the sun is typical of the strange goings-on by which comets capture man's eye and imagination. A comet has the lure of mystery. It trails a cloud of unanswered questions more awe-inspiring than the long, filmy tail it swishes across the stars. But technically a comet is only a star-like nucleus of meteor chunks, in a hazy shroud which sprouts a tail as it approaches the sun.

"Lawbreakers" of the Skies

These mavericks of the solar system approach the sun like little Bo-Peep's sheep, wagging their tails behind them, but they back out of its august presence with tails streaming out ahead. So delicate is the ultra-pulverized stardust or gas which forms the tails that gravity cannot grapple it. Pressure of the sun's light, which can be withstood by man unscathed, actually pushes backwards millions of miles of the sky-giant's body.

Speeding across the sky like stars on the loose, runaway comets are not so closely attached to the sun's apron strings as the primly revolving planets. Scorning the sober planetary paths, comets swoop down at all angles and skid around the sun in oval courses of all sizes.

About fifty complete their trans-celestial tour in less than a century, including Encke's and the sensational Halley's comet, last seen in 1910. Others dash so far afield that they would require forty thousand years or more for a round trip. Some comets make such lengthy loops that there is no guarantee of their ever returning.

A Comet That Split in Two, Then Vanished

These playboys of the heavens are privileged characters, making their own rules in defiance of everything except gravitation. Their pranks, however, have so far been harmless. In 1886 a comet dodged through Jupiter's procession of satellites, but not a single little moon was shaken up by the bull-in-a-china-shop encounter. The comet, on the other hand, has since been tethered more closely to the sun, reporting back every seven years instead of twenty-seven.

Another, in 1847, made astronomers' eyes pop by splitting itself in two, appearing five years later as twins, then vanishing completely, with only a trail of meteors left as souvenirs.

Meteor showers occurring in May, August, and November may be poor relations tagging after illustrious ancestors.

In shape, comets set a unique style. While other heavenly bodies are usually round, the comet is frequently egg-shaped, with millions of miles of tail. Some

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Photograph by W. Robert Moore

"WATER TAXIS" DO A THRIVING BUSINESS IN AMOY'S ISLAND-STUDDED HARBOR

The foreign settlement at Amoy is on the island of Kolongsu (above), across the harbor from the native town. Dozens of sampan owners are usually shouting for the job of carrying passengers back and forth. Just above the sloping masts (right center) rises the white facade of the American consulate, in the Georgia colonial style of architecture. The domed building on the hill to the left was a Japanese school.

comets appear as one-unit parades with appendages long enough to reach from the sun and envelop the earth. Sometimes the tail is shed like a tadpole's. Brilliant comets in 1836, 1908, and 1910 at times whisked off their glimmering trains and had to sprout new ones. A six-tailed cometary peacock in 1744 was a terrifying rarity, but modern observations often reveal many-pronged appendages. Some comets have no tail at all.

"Hairy Star" Was Feared as Ill Omen

Only the be-streamered brand of comet was recognized by the ancients. Its name means "the hairy one," and early observers shook in their sandals when a footloose star ran amuck among the constellations with its long, light hair blown about in headlong flight.

Shakespeare recorded that ominous changes were presaged by their "crystal tresses" brandished in the sky. More recently scientists discussed and discarded a theory that a comet caused Noah's flood tides and that it would return to wrap the world in doomsday fire.

Note: Some of the articles in the *National Geographic Magazine* containing additional astronomical photographs, text, and charts are: "Nature's Most Dramatic Spectacle" and "Eclipse Adventures on a Desert Isle," September, 1937; "Observing an Eclipse in Russia," February, 1937; "Observing a Total Eclipse of the Sun" and "Photographing the Eclipse of 1932 from the Air," November, 1932; "Interviewing the Stars," January, 1925; "The Foremost Achievement of Ancient America," February, 1922; and "Exploring the Glories of the Firmament," August, 1919.

Bulletin No. 5, November 15, 1937.

Photograph from Yerkes Observatory

SOMETIMES A COMET CHASES ITS OWN TAIL!

If the comet is approaching the sun, the tail ripples out behind it; if it has passed the sun, the tail streams on ahead, because the sun's light "blows" the tail always away. Its star-stuff is so thin as to be literally next to nothing, at least first cousin to a vacuum. It is only a scattered swarm of stone and metal fragments in a cloud of gas, no more crowded than a dozen marbles would be in a cubic mile. This wide spacing makes the comet transparent, and stars shine serenely through its wraithlike body. This comet, popularly called Morehouse's after its discoverer, shed its tail completely.